

CORRES. CONTROL
OUTGOING LTR. NO.

000058770

DOE ORDER # 4700.1

95RF 04974

EG&G ROCKY FLATS

DISTRIBUTION	LTR	ENC
AMARAL, M.E.		
BURLINGAME, A.H.		
BRANCH, D.B.		
CARNIVAL, G.J.		
DAVIS, J.G.		
FERERRA, D.W.		
FRAY, R.E.		
GEIS, J.A.		
GLOVER, W.S.		
GOLAN, P.M.		
HANNI, B.J.		
HARMAN, L.K.		
HEALY, T.J.		
HEDAHL, T.		
HILBIG, J.G.		
HUTCHINS, N.M.		
JACKSON, D.T.		
KELL, R.E.		
KUESTER, A.W.		
MARX, G.E.		
McDONALD, M.M.		
McKENNA, F.G.		
MONTROSE, J.K.		
MORGAN, R.V.		
POTTER, G.L.		
PIZZUTO, V.M.		
RISING, T.L.		
SANDLIN, N.B.		
SCHWARTZ, J.K.		
SETLOCK, G.H.		
STEWART, D.L.		
STIGER, S.G.		
TOBIN, P.M.		
VOORHEIS, G.M.		
WILSON, J.M.		
BUDDY	X	
SPENCE	X	
ROBERTS	X	
DENIKE	X	

FILE	X
CORRES. CONTROL	X
ADMIN RECORD	X
PROJECT FILE	X
PATS	
CLASSIFICATION	
UCNI	
UNCLASSIFIED	X
CONFIDENTIAL	
SECRET	

AUTHORIZED CLASSIFIER
SIGNATURE

DOCUMENT CLASSIFICATION
REVIEW WAIVER PER
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IN REPLY TO RFP CC NO:

ACTION ITEM STATUS:

PARTIAL/OPEN ☐

CLOSED ☐

LETTER APPROVALS:

ORIGINATOR & TYPIST INITIALS

:jlm

EG&G ROCKY FLATS, INC.

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June 8, 1995

ADMIN RECORD

95-RF-04974

Robert H. Birk
Environmental Restoration Division
DOE/RFFO

APPROVAL OF TECHNICAL MEMORANDUM 3, HUMAN HEALTH RISK
ASSESSMENT, MODEL DESCRIPTION, OPERABLE UNIT 3, APRIL 21, 1995 -
MSB-010-95

Action: None required

The approval letters received from the regulatory agencies relative to the above referenced document included some additional questions. EG&G Rocky Flats, Inc. would like to assist the Department of Energy/Rocky Flats Field Office (DOE/RFFO) in responding to these agency concerns. This letter contains the questions posed by the regulatory agencies and recommended responses.

The following questions were posed by the Environmental Protection Agency (EPA):

1. What is the definition of the "average 10-meter equivalent threshold velocity" mentioned in Section 3 of Technical Memorandum 3? Why is the 10-meter height considered relevant to the human health risk assessment instead of the breathing zone height?

Response: The average 10-meter equivalent threshold velocity is the wind velocity measured at 10 meters when re-suspension on the ground first begins.

The change in wind velocity with height from ground level to ten meters is a well known phenomena. Given the wind velocity at ten meters, the wind velocity responsible for dust re-suspension at ground level can be calculated. During the wind tunnel testing, the wind speed at the ground was measured at the point when dust re-suspension began and then converted to a ten meter wind speed. Ten meters is merely a standard height to report wind speeds. All EPA-approved models use the 10-meter wind speed for their dispersion calculations.

When the box model is run, the wind speed used (u) will be the average wind speed through the vertical extent of the box. The box is two meters high so the wind speed will be that at approximately one meter. See section 3.2.3 of Technical Memorandum 3.

2. How will various erosion rates, based on different wind speeds, be incorporated into the box model and how will the results be combined to determine the final particulate concentrations?

Response: Equations have been developed from the Midwest Research Institute wind tunnel data to calculate erosion rates. The equations describe how the emission rate changes with increasing wind speed. These equations represent the results of different regression techniques applied to the data, which correspond to varying emission rate.

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Equations most representative of Operable Unit (OU) 3 site conditions will be used to calculate the emission rates. For any given time where the wind speed is above the threshold for dust re-suspension, the equation will be used for that wind speed to calculate the emission rate. This emission rate will then be used to calculate the steady state concentration of particulates.

3. EPA has been concerned about the validity of the assumption that the radioactivity levels measured in the soil in Operable Unit 3 represent radioactivity levels in airborne particulates. From meetings held in January and February, 1994, we know that DOE/RFFO shares this concern and has analyzed various particulate fractions for plutonium and americium activity levels. We are very interested in the results of these analyses and request that DOE/RFFO provide this information and an opportunity to discuss it among EPA, DOE/RFFO, and the Colorado Department of Public Health and Environment.

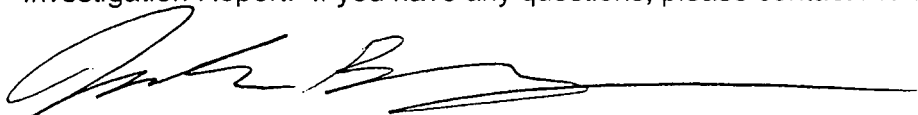
Response: The data from the plutonium analysis of the Midwest Research Institute wind tunnel study have been recently received from the laboratory. As soon as the results have been analyzed and evaluated, the data can be presented and further discussions can take place. The results of this analysis will be incorporated into the exposure modeling portion of the OU 3 Human Health Risk Assessment. The main piece of information we desire from these analyses is a comparison of the plutonium concentrations in the soil to the plutonium concentration of re-suspended particulates.

The following additional question was posed by the Colorado Department of Public Health and Environment:

1. It is not clear from the text whether the model results will be verified with available local meteorological data or with data obtained from the wind tunnel studies. If possible, the model should be verified with site specific information. The text only states (in table 3-1) that the wind speed parameter will be determined from wind tunnel studies and meteorological monitoring. However, it needs to be evaluated whether the results of the modeling make sense when compared to the monitoring data collected nearby.

Response: The model will utilize local meteorological data; specifically the mean wind speed through the vertical extent of the box, and the ten meter equivalent wind speed to calculate the erosion potential. The model will also incorporate input parameters derived from the wind tunnel study; specifically the equation derived to calculate the emission rate. The results will be compared to any site specific dust concentration measured in the area.

The above responses will be incorporated into the Human Health Risk Assessment portion of the Resource Conservation and Recovery Act [RCRA] Facilities Investigation/Remedial Investigation Report. If you have any questions, please contact me at extension 8519.



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Group 1 Closures
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